

JAPAN

EDICT OF GOVERNMENT

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JIS B 9222 (1989) (English): Standard form of
specification for air-blast sprayers

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*The citizens of a nation must
honor the laws of the land.*

Fukuzawa Yukichi

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JAPANESE INDUSTRIAL STANDARD

**Standard Form of Specification
for Air-Blast Sprayers**

JIS B 9222^{—1989}

Translated and Published

by

Japanese Standards Association

In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

JAPANESE INDUSTRIAL STANDARD

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Standard Form of Specification
for Air-Blast Sprayers

B 9222-1989

1. Scope

This Japanese Industrial Standard specifies the form of specification for travelling air-blast sprayers used mainly for air-blast spraying works in orchards and the like, hereinafter referred to as the "sprayers", and the method of writing in the specification form.

- Remarks 1. The sprayer referred to here means a travelling type power-driven sprayer which pulverizes and spreads a large amount of spray with an air blast through a large number of nozzles arranged at the discharge opening of a fan of large gas volume.
2. Those units and numerical values shown in { } in this Standard are based on the conventional units and are attached for informative reference.

2. Form of Specification

This specification is intended for presenting the summary of the characteristic data and performance of a sprayer, and the items to be written and the form therefor shall be as shown in Appended Table.

Depending on the purpose of the specification, items to be written may be suitably selected.

Further, as required, the construction of respective parts, material, testing methods, etc. shall be supplemented and drawings such as a general drawing, explanatory drawings, and drawings of partial details shall be appended.

3. Method of Writing Specification

The method of writing the specification shall be as follows.

The units used shall be as shown respectively in Attached Table.

- (1) Manufacturer's Name The name of the manufacturer or importer of the sprayer and the like shall be written.
- (2) Brand and Type The brand and type symbol marked on the nameplate of the sprayer shall be written.

Applicable Standard:

JIS Z 8401-Rules for Rounding off of Numerical Values

- (3) Kind of Sprayer The distinction of application for standing trees, trellises, common use for both, or the like shall be shown, and if required, the distinction between single-side spraying and both-side spraying shall be appended.
- (4) Main Dimensions The dimensions of the sprayer in storage shall be written in the design values.

The values written shall be rounded to units of 10 mm in accordance with JIS Z 8401.

- (a) Total Length Maximum length.
- (b) Total Width Maximum width.
- (c) Total Height Maximum height.
- (5) Mass The mass of the sprayer with a vacant chemical solution tank, carrying the specified quantities of fuel, lubricating oil, working oil, and cooling water, and attached with the specified equipment, shall be written.
- (6) Travelling Section
- (a) Mode of Travelling Distinction of self-propelling type, vehicle-mounted type, trailer type, etc. shall be described and in the case of self-propelling type, distinction of 3-wheeled, 4-wheeled, 6-wheeled, 8-wheeled, or crawler type, and in addition, the driving method, appended.
- (b) Mode of Speed Change Distinction of mechanical type, oil hydraulic type, or the like shall be described, and as required, the type of speed change mechanism, number of speed stages, type of pump, kind of working oil, etc., appended.
- (c) Mode of Steering Distinction of round handle steering (Ackermann method), or lever steering (skid steering method), etc. shall be described.
- (d) Mode of Braking Distinction of mechanical, oil hydraulic, disc, internal expansion, or other type, shall be described and if parking brakes are used, supplementary note to that effect, appended.
- (e) Wheels Number of tires, designation of tire, and air pressure shall be described.
- (f) Wheel Base Horizontal center distance between front and rear axle; where 3 or more axles exist, such distance for 1st, 2nd, axles, respectively and in this order shall be described.
- (g) Tread Distance between centers of left and right wheels shall be described; where 2 or more axles exist and have different treads, such distance for front and rear axles, respectively, or for 1st, 2nd, 3rd axles, respectively, and in this order, described. In the case of adjustable tread, its standard, minimum and maximum, shall be described.

- (h) Crawler Belt Width Width of crawler belts shall be described.
 - (i) Ground Contact Length Length across which crawler belts contact the ground shall be described.
 - (j) Crawler Belt Center Distance The distance between centers of left and right crawler belts shall be described.
 - (k) Travel Speed Design values of lowest and highest travel speeds shall be described.
 - (l) Turning Radius of Outermost Part of Machine Body The radius drawn by the outermost part of the machine body in working condition when the sprayer turns using brakes on a concrete-paved road shall be described; the 3rd decimal place and under of the value shall be counted as a unit of the 2nd place.
- (7) Chemical Solution Tank
- (a) Capacity Nominal capacity shall be described.
 - (b) Mode of Stirring Distinction between mechanical type, jet type, overflow type, and other type shall be described; where they are used in combination, a supplementary note to that effect, described.
- (8) Engine The following items and details shall be written. Where a plurality of engines are carried, they shall be described respectively.
- (a) Brand and Type Abbreviated manufacturer's name and type symbol marked on the engine.
 - (b) Kind Cooling method, number of cycles, number of cylinders, if required, cylinder arrangement, type of combustion chamber, valve arrangement, type of supercharger, and the like.
 - (c) Total Stroke Volume The value calculated from the following formula.

$$V = \frac{\pi}{4} D^2 L N \times 10^{-6}$$

$$\left\{ V = \frac{\pi}{4} D^2 L N \times 10^{-3} \right\}$$

where V : total stroke volume (l) {cc}

D : cylinder bore (mm)

L : stroke (mm)

N : number of cylinders

π : 3.1416

The value written shall be rounded to 3rd decimal place by cutting away 4th decimal place and under.

- (d) Engine Power Output The output and rotation speed specified by the sprayer manufacturer.
 - (e) Fuel Used Distinction between gasoline, gas oil, etc.
 - (f) Fuel Tank Capacity Specified capacity.
 - (g) Lubricating Oil Capacity Specified capacity.
 - (h) Mode of Starting The mode of starting such as cell motor type, recoil type, etc.
- (9) Fan
- (a) Type Distinction between centrifugal, axial flow, and other type shall be described.
 - (b) Normal Rotation Speed The rotation speed in working condition specified by the manufacturer shall be described; where a plurality of normal rotation speeds are specified, a supplementary note to that effect, described.
 - (c) Standard Gas Volume The gas volume in standard condition at normal rotation speed shall be described.
 - (d) Total Pressure The total pressure in standard condition at normal rotation speed shall be described.
- (10) Chemical Solution Pump
- (a) Brand and Type Abbreviated manufacturer's name and type symbol shall be described.
 - (b) Kind Distinction between reciprocation type (distinction between piston, plunger, etc.; number of sets, and the like) and rotation type (distinction between volute and other type, and distinction between single-stage, multistage, and the like), and other information shall be described.
 - (c) Normal Rotation Speed The rotation speed in working condition specified by the manufacturer shall be described.
 - (d) Normal Pressure The pressure in working condition specified by the manufacturer shall be described.
 - (e) Delivery Delivery amount including overflow at normal rotation speed and at normal pressure shall be described.
- (11) Nozzle
- (a) Kind Distinction between disc nozzle, tip nozzle, and the like; in the case of adjustable type, a supplementary note to that effect shall be appended.
 - (b) Number of Nozzles The number of nozzles attached shall be described.

- (c) Normal Spray Quantity Spray quantities at normal rotation speed and at normal pressure shall be described.

(12) Supply Pump

- (a) Brand and Type The abbreviation symbol or type symbol specified by the manufacturer shall be described.
- (b) Kind Distinction between rotary type (volute, volume, etc.) and jet type, and the like shall be described.
- (c) Delivery The delivery amount at normal rotation speed and at normal pressure shall be described.
- (13) Working Efficiency The value calculated from the following formula shall be written. The value written shall be rounded by counting 1st decimal place and under as an integral unit.

$$C = \frac{1000}{60 \cdot V \cdot W}$$

where C: working efficiency (min/10 a)

V: spraying speed (m/s) (3rd decimal place and under to be cut away)

The spraying quantity (l) per 10 a shall be within 500 l for standing trees, within 300 l for trellised pear trees, and within 150 l for trellised vines.

W: spraying width (m)

both-side spray for standing trees : 8 m

single-side spray for standing trees : 4 m

both-side spray for trellis : 7 m

single-side spray for trellis : 3.5 m

In the case of common use for standing trees and trellises, or in the case of simple use for trellises, the kind of the intended fruit trees shall be appended to the value written.

- (14) Safety Equipment Information concerning safety such as the distinction between "standard equipment" and "optional equipment" etc. shall be written.

(15) Other Information

- (a) Type Recognition Number or New Model Notification Number The type recognition number of the small-size special motor vehicle or the new model notification number of the large-size special motor vehicle based on the Road Transportation Vehicles Law shall be written.
- (b) Type Inspection Acceptance Number, Safety Appraisal Number, Etc. The type inspection acceptance number, safety appraisal number, or test result number by a public organization shall be written.

Appended Table

1. Manufacturer's Name	<hr/>			
2. Brand and Type	<hr/>			
3. Kind	<hr/>			
4. Main dimensions	<hr/>			
(a) Total Length	<hr/> mm			
(b) Total width	<hr/> mm			
(c) Total height	<hr/> mm			
5. Mass	<hr/> kg			
6. Travelling Section				
(a) Mode of Travelling	<hr/>			
(b) Mode of Speed Change	<hr/>			
(c) Mode of Steering	<hr/>			
(d) Mode of Braking	<hr/>			
(e) Wheels	Number of tires <hr/> Tire designation <hr/> Air pressure <hr/> kPa { <hr/> kgf/cm ² }			
(f) Wheel base	<hr/> mm 1st axle <hr/> mm 2nd axle <hr/> mm			
(g) Tread	Front wheel <hr/> mm or 1st axle <hr/> mm Rear wheel <hr/> mm 2nd axle <hr/> mm 3rd axle <hr/> mm			
(h) Crawler Belt Width	<hr/> mm			
(i) Ground Contact Length	<hr/> mm			
(j) Crawler Belt Center Distance	<hr/> mm			
(k) Travel Speed	Advance Minimum speed <hr/> m/s Maximum speed <hr/> m/s Retreat Minimum speed <hr/> m/s Maximum speed <hr/> m/s			
(l) Turning Radius of Outermost Part of Machine Body	<hr/> m			
7. Chemical Solution Tank				
(a) Capacity	<hr/> l			
(b) Mode of Stirring	<hr/>			
8. Engine				
(a) Brand and type	<hr/>			
(b) Kind	<hr/>			
(c) Total Stroke Volume	<hr/> l { <hr/> cc }			
(d) Engine Output	<hr/> kW { <hr/> PS } / <hr/> min ⁻¹ {rpm}			
(e) Fuel Used	<hr/>			
(f) Fuel Tank Capacity	<hr/> l			
(g) Lubricating Oil Capacity	<hr/> l			
(h) Mode of Starting	<hr/>			
(i) Main Driven Parts	<hr/>			

Appended Table (Continued)

9. Fan

(a) Type	_____
(b) Normal Rotation Speed	_____ min^{-1} { _____ rpm }
(c) Standard Gas Volume	_____ m^3/min
(d) Total Pressure	_____ kPa { _____ mmAq }

10. Chemical Solution Pump

(a) Brand and Type	_____
(b) Kind	_____
(c) Normal Rotation Speed	_____ min^{-1} { _____ rpm }
(d) Normal Pressure	_____ MPa { _____ kgf/cm^2 }
(e) Delivery	_____ $\text{m}^3/\text{min}^{-1}$ { _____ l/min }

11. Nozzle

(a) Kind	_____
(b) Number of Nozzles	_____
(c) Normal Spraying Quantity	_____ m^3/min { _____ min^{-1} } { _____ l/min { _____ rpm }

12. Supply Pump

(a) Brand and Type	_____
(b) Kind	_____
(c) Delivery	_____ m^3/min { _____ min^{-1} } { _____ l/min { _____ rpm }

13. Working Efficiency

_____ $\text{min}/10 \text{ a}$

14. Safety Equipment

15. Other Information

(a) Type Recognition Number or New Model Notification Number	_____ 農 _____ New No. _____
(b) Type Inspection Acceptance Number, Safety Appraisal Number	_____

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Japanese Text

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